

NOTES ON ANTHIDIUM PALLIVENTRE
CRESSON

BY CHARLES H. HICKS

University of California, Los Angeles, California

Much time has been spent, both in Colorado and California, in field observations on bees of the genus *Anthidium*, in an attempt to learn if they ever dig their own tunnels and nest cavities. Observation and much evidence has been to the contrary for the species observed, thus agreeing with the reports of Fabre and other writers that these bees commonly use deserted tunnels of the other insects, appropriate natural cavities or otherwise secure suitable nesting places. It was, therefore, with considerable interest that I found *Anthidium palliventre* Cress.¹ digging her own nest in the sand.

On July 8, 1928, at Newport Beach, California, a bee of this species was seen to fly to the side of a small sand hill and begin to dig at the edge of a slight depression. The area in which she chose to work was inhabited by several large wasps of the genus *Bembex*. These wasps flew back and forth over the sand, followed one another and on two occasions, when *A. palliventre* Cress. had strayed from her nest, gave chase. They troubled her some but did not deter her from her activities. The time being past noon with a clear sky and warm sun, conditions were excellent for a study of bees and wasps. The bee, after loosening the sand with her mandibles, moved back, kicking the sand forcibly and rapidly with her fore feet. Her mid and hind feet were spread apart, her abdomen elevated while the tarsi of her fore feet were bowed, thus allowing her to work somewhat after the fashion of *Bembex*.

By one o'clock she was working steadily at the nest. She kicked out or removed twenty-one loads of sand during the period between 1:10 and 1:18, an average of a little more than 2.6 loads a minute. In removing this sand she used her fore legs entirely, progressing backward by a series of kicks, intervaled by short stops, after she had come into view from the tunnel. She kicks the sand back from a given place by a series of rapid movements of her fore legs, stops for a second, walks backward a few millimeters and kicks the sand again. This is

¹ Kindly determined by Professor P. H. Timberlake.

repeated as many as twelve times, as she moves from first view to a distance of from 2 to 5 inches beyond the opening. The numbers from seven consecutive counts gave from 3 to 12, with an average of 7.7.

It was noticed that after 1:18 she remained within for a much longer period than usual and it seemed probable that she had begun the enlargement of a cavity for the cell. She soon after left this nest and flew about as though searching for another place to dig. She entered one other hole but soon came out hastily, head first. A *Bembex* flew after her and she returned to her nest. After she had excavated again for a while she was caught for identification.

The nest went into the sand at a slight angle to a distance of 4 inches. The material was loose and the exact measurement of the width of the tunnel could not be taken. There were many broken pieces of sea shells in the sand, one of which the bee had come to at the end of the tunnel and which had caused her some trouble.

Some other *Anthidia* were flying about on the same day, but the only individuals observed belonged to the one species. Another female was found to start a nest much as do many of the digger wasps. She loosened the soil with her mandibles and kicked it away with her fore feet. Her manner of digging agreed with that of the first.

In these instances we find, apparently, a decided exception in habit to that of many species of bees of this genus. The manner of digging of *A. palliventris* Cress. showed a high degree of efficiency as compared with that of habitual and skilled diggers among bees and wasps. Whether she ever appropriates another nest or cavity, as some species of the genus commonly do, must be learned from further observation.

A RARE PENTATOMID (HEMIPTERA)

While collecting in Coachella Valley near the Salton Sea last summer Dr. E. C. Van Dyke took a specimen of *Weda horvathi* Schouteden. So far as I can learn the only other known specimen is the type which probably is with Dr. Horvath in the National Museum of Hungary. This species looks like a *Podops* but may be distinguished by the carinate metasternum.—E. P. Van Duzee.